UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
BIN C15700
Seattle, WA 98115-0070

Refer to:
OSB2000-0118-FEC

April 9, 2002

Mr. Fred P. Patron
Senior Transportation Planning Engineer
Federal Highway Administration, Oregon Division
530 Center Street NE
Salem, OR 97301

Re: Endangered Species Act Section 7 Formal Consultation and Magnuson-Stevens Act Essential Fish Habitat Consultation for the Middle Fork John Day (Ritter) Bridge Project, Grant County, Oregon

Dear Mr. Patron:

Enclosed is a biological opinion (Opinion) prepared by the National Marine Fisheries Service (NMFS) pursuant to section 7 of the Endangered Species Act (ESA) on the effects of the proposed Middle Fork John Day (Ritter) Bridge replacement project in Grant County, Oregon. In this Opinion, NMFS concludes that the proposed action is not likely to jeopardize the continued existence of ESA listed Middle Columbia River (MCR) steelhead (*Oncorhynchus mykiss*) or destroy or adversely modify designated critical habitat. As required by the section 7 of the ESA, NMFS includes reasonable and prudent measures to minimize the impact of incidental take associated with this action.

This Opinion also serves as consultation on essential fish habitat (EFH) pursuant to section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act and implementing regulations at 50 CFR Part 600.

If you have any questions regarding this consultation, please contact Tom Loynes of my staff in the Oregon State Branch at 503.231.6892.

Sincerely,

F.r Michael R Crouse

D. Robert Lohn
Regional Administrator

cc: Rose Owens, ODOT
Molly Cary, ODOT
Chuck Howe, ODOT
Shelly Schmidt, ODOT
Randy Reeve, ODFW
Diana Hwang, USFWS
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Endangered Species Act - Section 7 Consultation
&
Magnuson-Stevens Act
Essential Fish Habitat Consultation

BIOLOGICAL OPINION

Middle Fork of the John Day River (Ritter Bridge) Bridge
Replacement Project, Grant County, Oregon

Agency: Federal Highway Administration

Consultation Conducted By: National Marine Fisheries Service,
Northwest Region

Date Issued: April 9, 2002

Issued by: for Michael R Crouse
D. Robert Lohn
Regional Administrator

Refer to: OSB2001-0118-FEC

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1. ENDANGERED SPECIES ACT

1.1 Background

On May 21 2001, the National Marine Fisheries Service (NMFS) received a Biological Assessment (BA) dated May 17, 2001 and a request from the Federal Highway Administration (FHWA) for Endangered Species Act (ESA) section 7 informal consultation for the Middle Fork of the John Day River (Ritter Bridge) Bridge Replacement Project. The Ritter Bridge is located approximately 10 miles north of Long Creek, Oregon. The action agency is the FHWA, and the Oregon Department of Transportation (ODOT) is the federally-designated representative and project proponent. Beak Consultants wrote the biological assessment and ODOT will administer the construction contract.

The FHWA/ODOT has determined that Middle Columbia River (MCR) steelhead (*Oncorhynchus mykiss*) may occur within the project area. MCR steelhead were listed as threatened under the ESA on March 25, 1999 (64 FR 14517). The proposed project is within MCR steelhead critical habitat, which was designated February 16, 2000 (65 FR 7764). Protective regulations were issued for MCR steelhead under section 4(d) of the ESA on July 10, 2000 (65 FR 42422). The FHWA/ ODOT, using methods described in *Making ESA Determinations of Effect for Individual or Grouped Actions at the Watershed Scale* (NMFS 1996), determined that the proposed action is likely to adversely affect MCR steelhead.

This Opinion is based on the information presented in the BA, and an amendment to the BA, which was developed through site visits, correspondence and meetings to obtain additional information. The objective of this Opinion is to determine whether the actions to demolish and remove the existing structure and construct a new structure are likely to jeopardize the continued existence of the MCR steelhead, or destroy or adversely modify critical habitat. This consultation is undertaken under section 7(a)(2) of the ESA and its implementing regulations, 50 CFR Part 402.

1.2 Proposed Action

This proposed project is designed to replace the Ritter Bridge over the Middle Fork of the John Day River approximately 10 miles north of Long Creek, Oregon. The 1997 Bridge Inspection Report documented cracks in the structural concrete and substandard lane widths. The report determined that this bridge was functionally obsolete and was not a candidate for rehabilitation. Continued use of the bridge without extensive rehabilitation would result in a future load limit on this structure. This would significantly impair commercial and private transportation.

All in-water work activities will occur during the standard in-water work timing guideline of July 15th through August 31st and any exceptions to the standard in-water work timing would be approved by NMFS only with concurrence by and in coordination with the appropriate Oregon Department of Fish and Wildlife (ODFW) biologist.

1.2.1 New Bridge Construction

The new bridge will be downstream from and adjacent to the existing bridge. The construction will consist of excavating and constructing two bridge footings, placing beams, forming and casting the bridge deck and curb, and installing the guardrail. Spread footings will be used to support the bent and will be adjacent to and above the ordinary high water (OHW) line. For this reason it will be necessary to encroach within the OHW line to form and cast the bents and the spread footings. The bank on the south end of the bridge will be enforced with a mechanically stabilized engineered (MSE) wall using simulated basalt rock. The MSE wall will be supported by steel pilings, cast in place, backfilled, and compacted up to final grade. The north approach will be compacted rock and soil material from a local quarry site.

There will be two access roads for work and maintenance. Both access roads will be on the upstream side of the bridge on each end. On the south side an existing access road will be upgraded and utilized so no new excavation will occur.

Two of the bents (bents 3 and 4) will be constructed just within the two-year flood elevation. Footing and bent construction will be done in an isolated area within a coffer dam. A sheetpile coffer dam will be used on bents 3 and 4 to enable isolated work outside of the inwater work period as long as the coffer dam is built in the dry. Settling ponds will be located about the 50-year flood elevation and surrounded by berms. The settling ponds will hold water pumped from the excavation areas within the coffer dams and solids will be allowed to settle out.

1.2.2 Mechanically Stabilized Engineered (MSE) Wall

An additional MSE wall will be constructed on the south end of the bridge. The MSE wall on the south end was designed to eliminate the need for excessive fill quantities within and adjacent to the 2-year floodplain. The estimated height of the wall will be 10 meters and the overall length will be 80 meters.

1.2.3 Access Roads and Staging

An access road at the north end, used for bridge maintenance, will run from the county road downslope on the upstream side. This road will stay above the 50-year flood elevation and will have a gravel or aggregate surface to reduce the potential for sediment transport. The access road on the south side will be an upgraded existing road. There will be ground disturbance associated with the north access road, however, since all disturbance will be above the 50-year flood elevation, riparian vegetation will not be impacted. The access roads will be graveled to minimize the risk of surface erosion and sediment reaching the river. Setup and staging of cranes will occur on both ends of the bridge and construction of the pads may extend below the 2-year flood elevation. These pads will be lined to prevent fuel, oil, or hydraulic fluid from reaching the river. There will be some short-term losses of riparian vegetation; replanting will occur upon completion of the work. During fueling or any other maintenance on the crane, there

will be full containment at all times. The general staging area will be located above the 50-year flood elevation and will be approved only in areas that limit or eliminate ground disturbance or tree removal.

1.2.4 Stormwater Runoff Treatment Facilities

The wider lanes on the new bridge will increase the amount of impervious surface by 962.7 square meters. The majority of the deck drainage will be collected on the north end of the new bridge structure. This stormwater will be routed to upland areas with porous fill material where infiltration is expected to occur. On the existing bridge, the water runs through scuppers on the bridge and directly into the river. The stormwater treatment system consists of a drain system which pipes the water down to a riprap (Class 50) filter approximately 6 meters long. From the filter, the water runs overland on property that ODOT has purchased, which will be planted with forbs, grasses and other vegetation. Prior to reaching the Middle Fork of the John Day River, the water will run through a 25-meter vegetative buffer.

1.2.5 Existing Bridge Demolition

Bridge demolition will occur during the second year of construction, and the bents would be removed during the second summer. Measures will be in place to contain the area and keep demolition material out of the water. The concrete deck will be cut into pieces small enough to be lifted out with a crane. The crane will be working from the upstream side either on the slope or the old fill. The remaining deck truss will be lifted from the center bents and taken from the work site. Because this truss has lead-based paint, appropriate measures will be taken for containment and handling of the material. The bents will be cut and broken into small manageable pieces and removed. The bents will be cut at least 0.6 meters below the stream substrate. The south bent is within the active channel and will need to be isolated from the actively flowing water using a method approved by ODOT. The north bent is outside the 2-year floodplain. Isolation of the work area and removal of the south bent will take place during the ODFW in-water work period.

1.2.6 Compensatory Mitigation

ODOT has tentatively agreed to assist with a riparian exclosure habitat improvement project on Granite Creek, near the project area. The project is approximately one mile up Granite Creek from the confluence with Middle Fork of the John Day River and involves the fencing of 33 to 100 meters of a riparian corridor on either side of Granite Creek to keep livestock out of the stream channel and riparian area. The total length of the project will be 1.3 kilometers, with three areas for livestock crossing. Additional mitigation will include reclaiming and replanting the fill slopes of the old bridge. Ponderosa pine seedlings will be spaced 3-meters apart. Any riparian vegetation that will be removed near the stream will be replaced with willow cuttings planted at 1-meter spacings.

1.3 Biological Information and Critical Habitat

The MCR steelhead Evolutionarily Significant Unit (ESU) was listed as threatened under the ESA on March 25, 1999 (64 FR 14517). Protective regulations were issued for MCR steelhead under section 4(d) of the ESA on July 10, 2000 (65 FR 42422). Biological information concerning the MCR steelhead is found in Busby et al. (1996). The current status of the MCR steelhead, based upon their risk of extinction, has not significantly improved since the species was listed, although these fish came under ESA protection so recently that it is difficult to discern any meaningful trends in the data that have been gathered since listing and conservation measures went into effect.

Critical habitat was designated for the MCR steelhead on February 16, 2000 (65 FR 7764). Critical habitat for MCR steelhead encompasses the major Columbia River tributaries known to support this ESU, including the Deschutes, John Day, Klickitat, Umatilla, Walla Walla, and Yakima Rivers, as well as the Columbia River and estuary. Critical habitat consists of all waterways below long-standing, naturally-impassable barriers, which includes the project area. The adjacent riparian zone is also considered critical habitat. This zone is defined as the area that provides the following functions: Shade, sediment, nutrient/chemical regulation, streambank stability, and input of large woody debris (LWD)/organic matter.

In addition, the Oregon Division of State Lands (ODSL) in cooperation with ODFW has designated specific waterways in the MCR as Essential Indigenous Anadromous Salmonid Habitat (essential habitat) (ODSL 1996) under Oregon Administrative Rules (OAR) 141-102-000. Mountain Creek, Rock Creek, and associated tributaries are within the Upper John Day part of the John Day River basin (HUC 17070201), which has been designated as essential habitat (http://statelands.dsl.state.or.us/esshabitat.html). Essential habitat is defined as the habitat that is necessary to prevent the depletion of indigenous anadromous salmonid species during their life history stages of spawning and rearing. OAR 141-102-000 stipulates policies and standards which must be complied with in these designated areas. Filling or removal in essential habitat is presumed by ODSL to be detrimental to indigenous anadromous salmonids, and fill or removal will only be authorized if it can be shown that only acceptable adverse impacts to indigenous anadromous salmonids or their essential habitat will occur or the removal/fill will benefit populations of indigenous salmonids.

1.4 Evaluating Proposed Actions

The standards for determining jeopardy are set forth in section 7(a)(2) of the ESA as defined by 50 CFR Part 402 (the consultation regulations). In conducting analyses of habitat-altering actions under section 7 of the ESA, NMFS uses the following steps: (1) Consider the status and biological requirements of the species; (2) evaluate the relevance of the environmental baseline

in the action area to the species' current status; (3) determine the effects of the proposed or continuing action on the species; (4) consider cumulative effects; and (5) determine whether the proposed action, in light of the above factors, is likely to appreciably reduce the likelihood of species survival in the wild or adversely modify its critical habitat. In completing this step of the analysis, NMFS determines whether the action under consultation, together with all cumulative effects when added to the environmental baseline, is likely to jeopardize the continued existence of the listed species, and/or result in destruction or adverse modification of their critical habitat. If NMFS finds that the action is likely to jeopardize the listed species and/or result in destruction or adverse modification of their critical habitat, NMFS must identify reasonable and prudent alternatives for the action.

1.4.1 Biological Requirements

The first step in the method NMFS uses for applying the ESA section 7(a)(2) to listed salmon is to define the biological requirements of the species most relevant to each consultation. NMFS also considers the current status of the listed species by taking into account population size, trends, distribution and genetic diversity. To assess the current status of the listed species, NMFS starts with the determinations made in its decision to list MCR steelhead for ESA protection and also considers new data available that are relevant to the determination.

The relevant biological requirements are those necessary for MCR steelhead to survive and recover to naturally reproducing population levels at which protection under the ESA would become unnecessary. Adequate population levels must safeguard the genetic diversity of the listed stock, enhance their capacity to adapt to various environmental conditions, and allow them to become self-sustaining in the natural environment.

For this consultation, the biological requirements are habitat characteristics that function to support successful spawning, rearing and migration. These involve streamflow, water quality, substrate, shade and cover. Because the current status of the MCR steelhead, based upon their risk of extinction, has not significantly improved since the species were listed, adverse impacts to these biological requirements have the potential to be significant.

1.4.2 Environmental Baseline

The environmental baseline is an analysis of the effects of past and on-going human and natural factors leading to the current status of the species or its habitat and ecosystem within the action area. The action area is defined as all areas (bank-line, adjacent riparian zone, and aquatic area) to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR 402.02). Direct effects occur at the project site and may extend upstream or downstream based on the potential for impairing fish passage, hydraulics, sediment and pollutant discharge, and the extent of riparian habitat modifications. Indirect affects may occur throughout the watershed where actions described in this Opinion lead to additional activities or affect ecological functions contributing to stream degradation. For this consultation,

the action area is the Middle Fork of the John Day River and the adjacent riparian area upstream to limits of project disturbance and downstream to the end of any visible sediment plume.

The Middle Fork of the John Day River is within the Blue Mountains eco-region. The following discussion is from the Oregon Progress Board (2000) *Oregon State of the Environment Report*. The eco-region is characterized by deep, rocky-walled canyons, glacially cut gorges, dissected plateaus, and broad alluvial river valleys characterize the landscape. Sagebrush and grassland steppes dominate parts of the western and southern part of the region. Ponderosa pine woodlands are characteristic at mid-elevations and mixed coniferous forests dominate at higher altitudes and north facing slopes at mid elevations. Extensive grasslands occur in and north of the Wallowa Mountains. The diversity in elevation, soils and climate yields diverse habitats and many endemic plant species. Riparian areas in valley bottoms are particularly important for aquatic and terrestrial organisms in arid landscapes where streamside vegetation provides shade and refuge. Riparian areas are among the most diverse natural communities in the region, largely concentrated in intermountain basins.

Four activities have had profound effects on the landscape of the region: timber harvest, fire suppression, grazing, and agriculture. Timber harvest in the eco-region began with the removal of the big, old-growth pines, firs, and larches. As a result, forests in the Blue Mountains today are younger and growing more densely than in the past. Most of the region is thinly populated, with small towns in the major valleys and rural residents scattered throughout the smaller valleys among the mountains. Timber, ranching, and agriculture provide the foundations for the local economy in most areas. Ranchers first settled the area in the mid-1800s, cutting riparian woodlands and draining the wetlands of the Baker, Powder, and Grande Ronde valleys to create rich, irrigated agricultural fields. The large central valleys of the Grande Ronde, Powder, and John Day Rivers have had their native riparian forests, wetlands, and grasslands almost entirely converted to agriculture. Most of these stream reaches have been simplified by channelization and straightening. Upland riparian conditions have improved since the early and mid 1900s when mining and grazing were unregulated, but riparian conditions remain degraded throughout the region, particularly in the middle and lower reaches of large river valleys such as the Grande Ronde, John Day, and Umatilla rivers.

Fish populations throughout the Blue Mountains eco-region are declining over a wide spatial extent. Major problems include shrinking distributions and limited genetic composition of existing populations. Major factors related to declines are hydroelectric dams on the mainstem Columbia River, water withdrawal, irrigation dams, livestock grazing, timber harvest, and legacies of mining. Nonetheless, the Blue Mountains provide a principal stronghold for native salmon and trout in the Columbia basin. Extensive aquatic diversity and quality habitat remain protected in the high elevation wilderness areas of the region.

The Middle Fork of the John Day River flows 32-kilometers from the Ritter Bridge Project site to its confluence with the North Fork of the John Day River. The Middle Fork of the John Day

River watershed has been impacted by timber harvest, agriculture, fire suppression and grazing. The following vegetation exists in the project area: Ponderosa pine (*Pinus ponderosa*), Douglas-fir (*Pseudotsuga menziesii*), willow spp. (*Salix spp*.), elderberry (*Sambucus spp*.), snowberry (*Symphoricarpos albus*), mock orange (*Philadelphus lewesii*), red-osier dogwood (*Cornus stolonifera*), ribes spp. (*Ribes spp.*), rose (*Rosa spp*.), chokecherry (*Prunus virginiana*), clematis (*Clematis spp.*), teasel (*Dipsacus sylvestris*), gooseberry (*Ribes lacustre*), serviceberry (*Amelanchier alnifolia*), and thin-leaf alder (*Alnus crispaia*); forbs include bluebunch wheatgrass (*Agropyron spicatum*), balsamroot (*Balsamorhiza spp*.), and pinegrass (*Calamagrostis rubescens*).

The Middle Fork of the John Day River has a fairly broad, shallow channel. Downstream of the bridge site the substrate is dominated by small boulders and large cobbles mixed with gravels. Throughout the project area there is good boulder habitat that provides cover. The riparian zone consists of a deciduous inner zone and a coniferous outer zone on the south side of the river. The riparian zone on the north side of the river consists of a pasture and some shrubs.

Habitat complexity appears to be limited in the lower watershed. The stream substrate in the watershed seems to have a high percentage of silt and organics, however, the project area has diverse substrate sizes. There is a lack of large woody debris and pools. Off-channel habitat is lacking due to losses of connectivity with the floodplain through historical channelization. Erosion is prevalent in the watershed, so streambank condition is poor and there is a high risk of future sedimentation due to these conditions. Fish cover is limited to boulders and pool depth, although depths are generally shallow.

The Middle Fork of the John Day River is on the Oregon Department of Environmental Quality (ODEQ) 303(d) List of Water Quality Limited Water Bodies for flow modifications and temperature (ODEQ 1999). In addition, Granite Creek is listed as "water quality limited" for temperature.

Although the Middle Fork of the John Day River in the action area flows through agricultural lands, the riparian area does provide some functional benefit as riparian and stream habitat in the context of the watershed. Throughout the action area, the riparian area exists as a continuous riparian zone on the south side of the stream with a young deciduous component adjacent to the stream and a developed coniferous component outside of that. The north side of the stream is much less vegetated consisting of a few shrubs, pasture and a barn. A barbed-wire fence runs along the riparian about 65 feet from the stream along the north side.

NMFS concludes that not all of the biological requirements of the species within the action area are being met under current conditions, based on the best available information on the status of the affected species, information regarding population status, trends, and genetics, and the environmental baseline conditions within the action area. Significant improvement in habitat conditions over those currently available under the environmental baseline is needed to meet the biological requirements for survival and recovery of these species. Any further degradation of

these conditions would have a significant impact due to the amount of risk they presently face under the environmental baseline.

1.5 Analysis of Effects

1.5.1 Fish Passage and Direct Impacts Resulting from In-water Work

Temporary disruptions to fish passage will occur during project construction. These disruptions will occur during the in-water work period. Isolation of the work area will be necessary to construct bents 3 and 4 and prevent impacts to the waterway. In the BA, there are three methods discussed to accomplish this. A fourth method was added in later and will be the likely method of work area isolation. The first method is the "dam and pump" isolation method. The work area would be isolated by constructing temporary dams on the upstream and downstream ends of the action area which would de-water the work area. Water would then be pumped completely around the action area and discharged back into the channel over a "Hydraulic Energy Dissipation/Sediment Control System." Above the upper dam, a trench would be excavated and filled with clean river gravel over plastic sheeting to control sub-surface flow. This method would completely block both upstream and downstream fish passage throughout the construction period. A second method is called the "Temporary Culvert Through the Work Zone Isolation method". This method is very similar to the first method except that a culvert would carry water through the work area and discharge below the lower dam and then over a "Hydrolic Energy Dissipation/Sediment Control System" as in the first method. Due to sub-surface flow this method may require a third temporary dam (still above the work zone), with the area between periodically requiring pumping. This method allows downstream passage of salmonids, however, upstream passage would be doubtful due to velocities within the culvert. The third method is the "Water Bladder Isolation method". This method isolates one side of the stream at a time, allowing free flow on the other side, thus maintaining fish passage both upstream and downstream. The isolated area would need to be pumped out and water discharged into the stream channel in much the same way as methods one and two. The fourth method is the "sheet pile isolation method." This method would be applied in the same manner as the "Water Bladder Isolation Method" except that sheet piles will be driven into the substrate and then removed after the project. All of these methods will require fish removal from the work area prior to beginning excavation. The "Water Bladder Isolation method" would be the preferred method due to fish passage and impacts to habitat.

Further discussions with ODOT made it clear that the method used would be isolation with water bladders or sheet piles (methods 3 and 4 above). Both of these options allow both upstream and downstream passage of fish, yet maintain an isolated work area. With either of these methods, isolation of the work area would necessitate fish removal efforts.

Any disruption in fish passage is expected to have a negligible impact on listed fish for several reasons. First, the likelihood of MCR steelhead presence in the action area is extremely low, although there is potential for juvenile MCR steelhead to be present. Secondly, low flows

expected during the construction period would minimize fish movements, since most salmonids seek out the deepest pools for summer rearing. Therefore, it is unlikely that listed fish will attempt to migrate through the action area during the in-water work. The greatest potential impact from work area isolation efforts would be turbidity, which can affect egg survival, emergence and stream substrate. Turbidity would occur when the work area is de-watered and when the work isolation area system is removed upon completion of construction work. This can create short-term, temporary impacts, as well as displace fish rearing at or downstream of the construction site.

1.5.2 Sediment Control

Typical of many creeks running through agricultural lands, the Middle Fork of the John Day River has a sediment and turbidity problem due to erosion of stream banks throughout the watershed. Streams with high loads of fine sediments typically have poor spawning gravels because the fine sediments are deposited over the spawning gravels affecting the availability of oxygen. The greatest risk of impact from the proposed action from turbidity is during construction. The applicant will implement a strict erosion control plan to ensure effective erosion control measures. Ongoing turbidity observations will evaluate the effectiveness of erosion control measures. Following construction, the site should be stable and no point sources for sediment should be present within the action area.

1.5.3 Water Quality Impacts

The potential for an increase in runoff, high in pollutants, will increase following construction of the new bridge as a result of stormwater runoff from new impervious surface into the Middle Fork of the John Day River. Stormwater runoff from the increased impervious surface (962.7 square meters) will be routed to upland areas with porous fill material where infiltration is expected to occur. This runoff will also be allowed to filter through existing vegetation adjacent to the bridge prior to reaching the Middle Fork of the John Day River**.** This will be an improvement over the current bridge, which allows untreated runoff to flow directly into the river via scuppers. Constructing the new bents closer to the 2-year flood elevation will improve hydraulic function over the long-term.

1.5.4 Riparian and Instream Impacts

Riparian vegetation provides LWD to the creek system, which facilitates the creation of rearing and spawning areas. The incorporation of riparian plantings of trees and shrubs where the existing bridge has been removed and will help offset the loss of future large wood recruitment. However, riparian vegetation also provides: Water quality functions (temperature control, nutrient transformations); bank stability; detritus (insect and leaf input, small wood for substrate for insects, etc.); microclimate formation; retention of flood waters; floodplain sediment retention; vegetative filtering; and recharge of the stream hyporheic zone. The loss of vegetation for a distance of 30 m along the Middle Fork of the John Day River will reduce the ability of the

remaining riparian area to support natural stream processes, including processes essential to supporting salmon. This area would be replanted with native trees and vegetation to offset losses.

Construction of the access roads will avoid impacts to riparian vegetation by staying above the 50-year flood elevation. Some riparian vegetation (~100 m^2) will be removed while constructing the crane pad and setting up the crane. This loss of riparian vegetation will be short-term and replacement vegetation will be planted immediately after the project.

The FHWA has proposed to replant the riparian area adjacent to the project foot print with native trees and shrubs. The plantings will offset the loss of current riparian vegetation; however, it will be many years before the new plantings will help cool and filter the water through shading and interception. Replanting will occur during the planting season (October 15 - March 15) to ensure adequate water and root establishment prior to periods of freezing weather.

1.5.5 Effects on Critical Habitat

NMFS designates critical habitat based on physical and biological features that are essential to the listed species. Essential features of designated critical habitat include substrate, water quality, water quantity, water temperature, food, riparian vegetation, access, water velocity, LWD recruitment, space and safe passage. The proposed construction project would occur within designated critical habitat for MCR steelhead.

Riparian function will be impacted by the proposed action, as described in *Section 1.5.4* of this Opinion. Habitat features that will likely be negatively impacted by the proposed action include water quality (including temperature), riparian vegetation and future recruitment of LWD. Implementation of project conservation measures as described above in the BA would avoid or minimize the risk of lethal effects.

1.5.6 Cumulative Effects

Cumulative effects as defined in 50 CFR 402.02, include the effects of "future state, Tribal, local, or private actions, not involving Federal activities, that are reasonably certain to occur within the action area". Other activities in the Columbia and John Day watersheds conducted by state, Tribal and local governments and private individuals have the potential to impact fish and habitat within the action area.

State, Tribal and local government actions are likely to be in the form of legislation, administrative rules, or policy initiatives. Government and private actions may include change in land use and water use patterns, including ownership and use intensity any of which could affect listed species or their habitat. Even actions that are already authorized are subject to political, legislative, and fiscal uncertainties. These realities make a quantitative analysis of cumulative effects difficult and speculative (NMFS 2000).

The proposed action area is within a sparsely populated area with agricultural lands in the lower part of the basin and forested lands in the upper portion of the basin. At this time, NMFS is unaware of any pending actions within the action area.

1.6 Conclusion

After reviewing the current status of MCR steelhead, the environmental baseline for the action area, the effects of the proposed Middle Fork of John Day River (Ritter) Bridge Replacement Project, and cumulative effects, it is NMFS' Opinion that this project, as proposed, is not likely to jeopardize the continued existence of the listed species, nor is it likely to destroy or adversely modify designated critical habitats. NMFS applied its evaluation methodology (NMFS 1996) to the proposed action and found that it would cause minor, short-term adverse degradation of anadromous salmonid habitat due to sediment/turbidity impacts, temperature modification, and de-watering the work area. At the same time, there will be long-term benefits to listed species due to improved hydraulic function and water quality treatment. This conclusion is based on findings that the proposed action will minimize death or injury to listed species by limiting the amount of riparian vegetation that is removed, treating stormwater runoff, isolating the bent excavation within the actively flowing channel, and salvaging listed juvenile salmonids present within the work area isolation system if needed.

Adequate planting activities will increase the likelihood of restoring impacted riparian functions at the site. The disturbed riparian area is within the critical habitat for MCR steelhead. It will take at least five years of vegetation growth before function begins to return. Several areas that are currently lacking vegetation will also be planted with native trees and vegetation. The benefits of the stormwater treatment should show improvements to water quality and hydraulic function, respectively, shortly after construction is complete, no later than the year following the completion of the bridge replacement. The effect from these actions will be to maintain or improve properly functioning aquatic habitat in the long term.

1.7 Reinitiation of Consultation

As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained or is authorized by law and if: 1) The amount or extent of incidental take is exceeded, 2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this Opinion, 3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this Opinion, or 4) a new species is listed or critical habitat is designated that may be affected by the action. In instances where the amount or extent of authorized incidental take is exceeded, any operations causing such take must cease pending reinitiation of consultation.

2. INCIDENTAL TAKE STATEMENT

Sections 4 (d) and 9 of the ESA prohibit any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, and sheltering. Harass is defined as actions that create the likelihood of injuring listed species to such an extent as to significantly alter normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. Incidental take is take of listed animal species that results from, but is not the purpose of, the Federal agency or the applicant carrying out an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

An incidental take statement specifies the impact of any incidental taking of endangered or threatened species. It also provides reasonable and prudent measures that are necessary to minimize impacts and sets forth terms and conditions with which the action agency must comply in order to implement the reasonable and prudent measures.

2.1 Amount or Extent of the Take

The NMFS anticipates that the action covered by this Opinion is reasonably certain to result in incidental take of MCR steelhead because of detrimental effects from increased sediment levels and the potential for direct incidental take during in-water work. Based on the time of year and elevated water temperatures, the potential for take is low. Effects such as temporarily elevated temperatures and the five year loss of riparian vegetation are largely unquantifiable in the short term, and are not expected to be measurable as long-term harm to steelhead behavior or population levels. NMFS expects the possibility exists for handling steelhead during the work isolation process resulting in incidental take to individuals. NMFS anticipates that incidental take of up to 50 juvenile steelhead could occur as a result of the work area isolation action covered by this Opinion. The extent of the take is limited to MCR steelhead in the action area, which is the Middle Fork of the John Day River and the adjacent riparian area upstream to limits of project disturbance and downstream to the end of any visible sediment plume. Middle Fork of the John Day River and to associated riparian habitat in the project area. The action area is defined above in Section 1.4.2 (Environmental Baseline).

2.2 Reasonable and Prudent Measures

The measures described below are non-discretionary. They must be implemented so that they become binding conditions in order for the exemption in section 7(a)(2) to apply. The FHWA has the continuing duty to regulate the activities covered in this incidental take statement. If the

FHWA fails to require adherance to the terms and conditions of the incidental take statement through enforceable terms added to the document authorizing this action, or fails to retain the oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(a)(2) may lapse.

The Middle Fork of the John Day River (Ritter) Bridge replacement project includes a set of best management practices (BMPs) designed to minimize take of listed species. These BMPs are described on pages 26-52 of the BA for this project, dated July 12, 2001. Specific BMPs for in-water and bank work, clearing and grubbing, bridge removal, erosion control, hazardous materials, and site-specific conservation and habitat remediation measures are included. The NMFS regards these BMPs as integral components of the Middle Fork of the John Day River (Ritter) Bridge replacement project and considers them part of the proposed action. The NMFS concludes that the proposed project carried out consistent with these BMPs and the reasonable and prudent measures below does not require further consultation. However, if the action is carried out differently than is specified in these BMPs and RPMs, further consultation will be required.

NMFS believes that the reasonable and prudent measures are necessary and appropriate to minimize the likelihood of take of listed fish resulting from implementation of this opinion. The following reasonable and prudent measures will also minimize adverse effects to designated critical habitat:

1. To minimize the incidental take of listed species all in-water work shall be scheduled as necessary to avoid harming vulnerable salmon life stages, including spawning, migration and rearing.

2. To minimize the incidental take of listed species all in-water work area (coffer dam and bent construction) shall be isolated from flowing water to avoid incidental take from de-watering and increased turbidity.

3. To minimize the incidental take of listed species all erosion control measures and plantings for site restoration shall be monitored both during and following construction, to assure they are effective in avoiding take of listed species.

2.3 Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the ESA, the FHWA must comply with the following terms and conditions which implement the reasonable and prudent measures described above for each category of activity. These terms and conditions are non-discretionary.

1. To implement Reasonable and Prudent Measure #1 (in-water timing), the FHWA shall ensure that:

a. All work within the active channel that could potentially contribute sediment or toxicants to downstream fish-bearing systems will be completed within the ODFW approved in-water work period.[1]

b. Extensions of the in-water work period, including those for work outside the wetted perimeter of the stream but below the ordinary high water mark must be approved by NMFS.

2. To implement Reasonable and Prudent Measure #2 (isolation of in-water work area) the FHWA shall ensure that during toe trench excavation and placement of riprap, the work area is well isolated from the active flowing stream within a coffer dam (made out of sandbags, sheet pilings, inflatable bags, turbidity curtain or etc.), or similar structure, to minimize the potential for sediment entrainment.

a. If the fish salvaging aspect of this project requires the use of seine equipment to capture fish, it must be accomplished as follows:

i. Before and intermittently during pumping, attempts will be made to seine and release fish from the work isolation area as is prudent to minimize risk of injury.

ii. Seining will be conducted by, or under the supervision of an Oregon Department of Fish and Wildlife (ODFW) biologist or their designated representative experienced in such efforts. Staff working with the seining operation must have the necessary knowledge, skills, and abilities to ensure the safe handling of all ESA-listed fish.

iii. ESA-listed fish must be handled with extreme care and kept in water to the maximum extent possible during seining and transfer procedures. The transfer of ESA-listed fish must be conducted using a sanctuary net that holds water during transfer, whenever necessary to prevent the added stress of an out-of-water transfer.

iv. Seined fish must be released as near as possible to capture sites.

v. If a dead, injured, or sick listed species specimen is found, initial notification must be made to the National Marine Fisheries Service Law Enforcement Office, in the Vancouver Field Office, 600 Maritime, Suite 130, Vancouver, Washington 98661 at 360.418.4246. Care should be

[1] Oregon Department of Fish and Wildlife, *Guidelines for Timing of In-Water Work to Protect Fish and Wildlife Resources*, 12 pp (June 2000)(identifying work periods with the least impact on fish)(http://www.dfw.state.or.us/ODFWhtml/InfoCntrHbt/0600_inwtrguide.pdf).

taken in handling sick or injured specimens to ensure effective treatment and care. Dead specimens should be handled to preserve biological material in the best possible state for later analysis of cause of death. With the care of sick or injured listed species or preservation of biological materials from a dead animal, the finder has the responsibility to carry out instructions provided by Law Enforcement to ensure that evidence intrinsic to the specimen is not disturbed.

vi. The FHWA shall ensure that the transfer of any ESA-listed fish to third parties other than NMFS personnel requires written approval from the NMFS.

vii. The FHWA shall ensure that any other Federal, state, and local permits and authorizations necessary for the conduct of the seining activities will be obtained prior to project seining activity.

viii. The ODOT must allow the NMFS or its designated representative to accompany field personnel during the seining activity, and allow such representative to inspect the seining records and facilities.

ix. A description of any seine and release effort will be included in a post project report, including the name and address of the supervisory fish biologist, methods used to isolate the work area and minimize disturbances to ESA-listed species, stream conditions before and following placement and removal of barriers, the means of fish removal, the number of fish removed by species, the condition of all fish released, and any incidence of observed injury or mortality.

b. If the fish salvaging aspect of this project requires the use of electrofishing equipment to capture fish, it must be accomplished as follows (NMFS 1998):

i. Electrofishing may not occur near listed adults in spawning condition or near redds containing eggs.

ii. Equipment must be in good working condition. Operators must go through the manufacturer's preseason checks, follow all provisions, and record major maintenance work in a log.

iii. A crew leader (ODFW or their designated representative) having at least 100 hours of electrofishing experience in the field using similar equipment must train the crew. The crew leader’s experience must be documented and available for confirmation; such documentation may be a logbook. The training must occur before an inexperienced crew begins any

electrofishing; it must also be conducted in waters that do not contain listed fish.

iv. Measure conductivity and set voltage as follows:

Conductivity (umhos/cm)	Voltage
Less than 100	900 to 1100
100 to 300	500 to 800
Greater than 300	150 to 400

v. Direct current (DC) must be used at all times.

vi. Each session must begin with pulse width and rate set to the minimum needed to capture fish. These settings should be gradually increased only to the point where fish are immobilized and captured. Start with pulse width of 500us and do not exceed 5 milliseconds. Pulse rate should start at 30Hz and work carefully upwards. In general, pulse rate should not exceed 40 Hz, to avoid unnecessary injury to the fish.

vii. The zone of potential fish injury is 0.5m from the anode. Care should be taken in shallow waters, undercut banks, or where fish can be concentrated because in such areas the fish are more likely to come into close contact with the anode.

viii. The monitoring area must be worked systematically, moving the anode continuously in a herringbone pattern through the water. Do not electrofish one area for an extended period.

ix. Crew members must carefully observe the condition of the sampled fish. Dark bands on the body and longer recovery times are signs of injury or handling stress. When such signs are noted, the settings for the electrofishing unit may need adjusting. Sampling must be terminated if injuries occur or abnormally long recovery times persist.

x. Whenever possible, a block net must be placed below the area being sampled to capture stunned fish that may drift downstream.

xi. The electrofishing settings must be recorded in a logbook along with conductivity, temperature, and other variables affecting efficiency. These notes, with observations on fish condition, will improve technique and form the basis for training new operators.

3. To implement Reasonable and Prudent Measure #3 (monitoring and reporting), above, the FHWA shall ensure that:

   a. Within 120 days of completing the project, the FHWA shall ensure submittal of a monitoring report to NMFS describing the FHWA's success meeting their permit conditions. This report will consist of the following information:

      i. Project identification.

         (1) Project name.
         (2) Starting and ending dates of work completed for this project.
         (3) The FHWA contact person.
         (4) Monitoring reports shall be submitted to:

             National Marine Fisheries Service
             Oregon State Branch, Habitat Conservation Division
             Attn: OSB2000-0118-FEC
             525 NE Oregon Street, Suite 500
             Portland, Oregon 97232-2778

      ii. Isolation of in-water work area. A report of any seine or electrofishing and release activity including:

         (1) The name and address of the supervisory fish biologist.
         (2) Methods used to isolate the work area and minimize disturbances to ESA-listed species.
         (3) Stream conditions before and following placement and removal of barriers.
         (4) The means of fish removal.

         (5) The number of fish removed by species.
         (6) The location and condition of all fish released.
         (7) Any incidence of observed injury or mortality.

      iii. Pollution and erosion control. Copies of all pollution and erosion control inspection reports, including descriptions of any failures experienced with erosion control measures, efforts made to correct them and a description of any accidental spills of hazardous materials.

      iv. Site restoration. Documentation of the following conditions:

         (1) Finished grade slopes and elevations.

(2) Log and rock structure elevations, orientation, and anchoring, if any.
(3) Planting composition and density.
(4) A plan to inspect and, if necessary, replace failed plantings and structures for five years.

v. Monitoring. On an annual basis, for 5 years after completing the project, the FHWA shall ensure submital of a monitoring report to NMFS describing the FHWA's success in meeting their habitat restoration goals of the riparian plantings. This report will consist of the following information.

Project identification.
(1) Project name,
(2) starting and ending dates of work completed for this project, and
(3) the FHWA contact person.

Riparian restoration. Documentation of the following conditions:
(1) Any changes in planting composition and density.
(2) A plan to inspect and, if necessary, replace failed plantings and structures, including the compensatory mitigation site.

vi. A narrative assessment of the project's effects on natural stream function.

vii. Photographic documentation of environmental conditions at the project site and compensatory mitigation site(s) (if any) before, during and after project completion.

(1) Photographs will include general project location views and close-ups showing details of the project area and project, including pre and post construction.
(2) Each photograph will be labeled with the date, time, photo point, project name, the name of the photographer, and a comment describing the photograph's subject.
(3) Relevant habitat conditions include characteristics of channels, streambanks, riparian vegetation, flows, water quality, and other visually discernable environmental conditions at the project area, and upstream and downstream of the project.

3. Magnuson-Stevens Fishery Conservation and Management Act

3.1 Background

The Magnuson-Stevens Fishery Conservation and Management Act (MSA), as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), established procedures designed to identify, conserve, and enhance essential fish habitat (EFH) for those species regulated under a Federal fisheries management plan. Pursuant to the MSA:

- Federal agencies must consult with NMFS on all actions, or proposed actions, authorized, funded, or undertaken by the agency, that may adversely affect EFH (§305(b)(2)).
- NMFS must provide conservation recommendations for any Federal or State action that would adversely affect EFH (§305(b)(4)(A)).
- Federal agencies must provide a detailed response in writing to NMFS within 30 days after receiving EFH conservation recommendations. The response must include a description of measures proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity on EFH. In the case of a response that is inconsistent with NMFS EFH conservation recommendations, the Federal agency must explain its reasons for not following the recommendations (§305(b)(4)(B)).

EFH means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (MSA §3). For the purpose of interpreting this definition of EFH: Waters include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; substrate includes sediment, hard bottom, structures underlying the waters, and associated biological communities; necessary means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and "spawning, breeding, feeding, or growth to maturity" covers a species' full life cycle (50 CFR 600.10). Adverse effect means any impact which reduces quality and/or quantity of EFH, and may include direct (*e.g.*, contamination or physical disruption), indirect (*e.g.*, loss of prey or reduction in species fecundity), site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions (50 CFR 600.810).

EFH consultation with NMFS is required regarding any Federal agency action that may adversely affect EFH, including actions that occur outside EFH, such as certain upstream and upslope activities.

The objectives of this EFH consultation are to determine whether the proposed action would adversely affect designated EFH and to recommend conservation measures to avoid, minimize, or otherwise offset potential adverse effects to EFH.

3.2 Identification of Essential Fish Habitat

Pursuant to the MSA the Pacific Fisheries Management Council (PFMC) has designated EFH for three species of federally-managed Pacific salmon: chinook (*Oncorhynchus tshawytscha*), coho

(*O. kisutch*), and Puget Sound pink salmon (*O. gorbuscha*)(PFMC 1999). Freshwater EFH for Pacific salmon includes all those streams, lakes, ponds, wetlands, and other water bodies currently, or historically accessible to salmon in Washington, Oregon, Idaho, and California, except areas upstream of certain impassable man-made barriers (as identified by the PFMC 1999), and longstanding, naturally-impassable barriers (i.e., natural waterfalls in existence for several hundred years). Detailed descriptions and identifications of EFH for salmon are found in Appendix A to Amendment 14 to the Pacific Coast Salmon Plan (PFMC 1999). Assessment of potential adverse effects to these species' EFH from the proposed action is based, in part, on this information.

3.3 Proposed Action

The proposed action is detailed above, in section Section 1.2 (Proposed Action) of this Opinion. The proposed action area includes the Middle Fork of the John Day River and the adjacent riparian area upstream to limits of project disturbance and downstream to the John Day River. The proposed action area encompasses the PFMC-designated EFH for chinook salmon. A description and identification of EFH for salmon is found in Appendix A to Amendment 14 to the Pacific Coast Salmon Plan (PFMC 1999). Assessment of the impacts to these species' EFH from the above proposed FHWA action is based on this information.

The objectives of this EFH consultation are to determine whether the proposed action may adversely affect EFH for the species listed above, to recommend conservation measures to avoid, minimize, or otherwise offset potential adverse impacts to EFH resulting from the proposed action.

3.4 Effects of the Proposed Action

NMFS expects that the effects of this project on chinook salmon EFH are likely to be within the range of effects to listed MCR steelhead considered in the ESA portion of this consultation. Based on that analysis, NMFS finds that the proposed project is likely to adversely affect EFH for chinook salmon.

3.5 Conclusion

NMFS concludes that the proposed action would adversely affect designated EFH for chinook salmon

3.6 EFH Conservation Recommendations

The FHWA have provided for minimization of the potential effects to EFH in the proposed project design. The reasonable and prudent measures and the terms and conditions outline above in section 2 are applicable to designated EFH, and they constitute NMFS' EFH conservation

recommendations. If the FHWA implements these recommendations, potential adverse effects to EFH will be minimized.

3.7 Statutory Response Requirement

Pursuant to the MSA (§305(b)(4)(B)) and 50 CFR 600.920(j), Federal agencies are required to provide a detailed written response to NMFS' EFH conservation recommendations within 30 days of receipt of these recommendations. The response must include a description of measures proposed to avoid, mitigate, or offset the adverse impacts of the activity on EFH. In the case of a response that is inconsistent with the EFH conservation recommendations, the response must explain the reasons for not following the recommendations, including the scientific justification for any disagreements over the anticipated effects of the proposed action and the measures needed to avoid, minimize, mitigate, or offset such effects.

3.8 Supplemental Consultation

The FHWA must reinitiate EFH consultation with NMFS if the action is substantially revised in a manner that may adversely affect EFH, or if new information becomes available that affects the basis for NMFS' EFH conservation recommendations (50 CFR Section 600.920[k]).

4. LITERATURE CITED

Section 7(a)(2) of the ESA requires biological opinions to be based on "the best scientific and commercial data available." This section identifies the data used in developing this Opinion.

Busby, P. J., T.C. Wainwright, G.J. Brant, L.J. Lierheimer, R.S. Waples, F.W. Waknitz, and I. V. Lagomarsino. 1996. Status Review of West Coast Steelhead from Washington, Idaho, Oregon, and California. U.S. DOC, NOAA Tech. Memo. NMFS-NWFWC-27, 115 p.

NMFS (National Marine Fisheries Service). 1997. Status Review Update for Deferred and Candidate ESUs of West Coast Steelhead. December. 62p.

NMFS. Guidelines for Electrofishing Waters Containing Salmonids Listed Under the Endangered Species Act. 2000. Protected Resources Division, Portland, Oregon, 5 pp.

NMFS. 1996. Making Endangered Species Act determinations of effect for individual and grouped actions at the watershed scale. Habitat Conservation Program, Portland, Oregon, 32 p.

ODEQ. ODEQ's 1998 303d List of Water Quality Limited Streams & Oregon's Criteria Used for Listing Waterbodies. 1999. Oregon Department of Environmental Quality (ODEQ), Portland, OR. (www.deq.state.or.us/wq/303dlist/303dpage.htm).

ODSL. Essential Indigenous Salmonid Habitat, Designated Areas (OAR 141-102-030). 1996. Oregon Division of State Lands. Portland, OR.

Oregon Progress Board. 2000. Oregon State of the Environment Report 2000. Produced for the Oregon Progress Board by the SOER Science Panel. September 2000.

PFMC (Pacific Fishery Management Council), 1998a. *Final Environmental Assessment/Regulatory Review for Amendment 11 to the Pacific Coast Groundfish Fishery Management Plan*. October 1998.

PFMC (Pacific Fishery Management Council), 1998b. *The Coastal Pelagic Species Fishery Management Plan: Amendment 8*. December 1998.

PFMC (Pacific Fishery Management Council). 1999. *Amendment 14 to the Pacific Coast Salmon Plan*. Appendix A: Description and Identification of Essential Fish Habitat, Adverse Impacts and Recommended Conservation Measures for Salmon. Portland, Oregon